Spiritus Ex Machina: The Rights of Autonomous Artificial Intelligence by 2050

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by

Benjamin Harvey

The Ohio State University

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Project Advisor: Professor David Staley, Department of History

"Change is the law of life. And those who look only to the past or present are certain to miss the future." - ***John F. Kennedy***

The future has not happened yet. That is a fact of time that is indisputable. However, the present, from which the future is derived, is currently occurring. The study of the now, the past of the future, if you will, is an opportunity for a historian to project future scenarios one, five, ten, or more years from now. My thesis will examine the timeframe in and around the year 2050, in the context of Artificial Intelligence and their rights and human relations. I will be examining current events and past events and projecting their impact on scenarios.

There have been various ways of looking at the progressions of time. The ancients thought of it as a circle, later, some religions called it a predetermined line, or a little less predetermined line, the popular BBC series Doctor Who would have you believe that it is a ball, and others, the post-modernist historians who have lent their powers to the rise of futurism, see it more as a growing tree, with the trunk being what we call the present, and the branches being the many scenarios that could occur. Travelling down each branch we find smaller branches, which then lead to twigs from which dozens or more leaves sprout, and within each leaf various sections and veins. Each leaf holds within it all of the potential of being what the future of everything will one day become. A historian who deals chiefly with the past, what most historians are known to do, observe the roots of this tree, following the tendrils of growth down into the earth as far as they go and in every direction. The principles used to follow these roots can be used, as scholars such as Jenkins, White, Wager, and Ankersmit have used them, and allow the historian of the present to turn their attention upwards from the foundation of the tree, to the leaves swaying in the temporal breeze overhead.

There appears to be a distinct schism in what is an acceptable means of creating the representation of the future. The post-modernist idea of Historians having total interpretive freedom, on the basis of the past not existing outside of literary history that has been constructed by historians, and does not necessarily need to be judged before actual events, is at odds with the idea that, as suggested by Ankersmit, the similarities between what is written and what actually occurred are where we get our understanding of how we "experience" the past, or, in the context of futurism, the future.

Until a machine that allows the historian to physically travel to the past or future is invented, they must create a way to envision that past. Representation not being something to confuse with what is being represented, as the two are not the same. "A representation is a substitute or replacement of something else that is absent." Historians will propose how something may have, or will, occur. There will be debate, additions and subtractions from the subject, and inevitably some form of change will affect the overall scenario, leading to the possible creation of more scenarios. Fortunately, after said debate has occurred, a system of checks exists by which to verify the trueness of a scenario. Does it fulfill the requirements of futurability, completeness, consistency, breadth, and utility?[1] Supposing a scenario passes all of these checks, but the scenario is suddenly no longer accurate, it is always open to reinterpretation. Adjusting the narrative of history and future when new information becomes available is a necessary part of continuing to understand reality.

Supposing that a future scenario seems exceedingly likely, and has passed these various checks, historians still have the problem of their work never being completely true, simply by the

[1] David J. Staley, History and future: using historical thinking to imagine the future (Lanham, MD: Lexington Books, 2010).

nature of history itself. With a literally uncountable number of factors, both large and small, acting upon any one event at any one time, the best a historian can hope to do is represent the event in coherence with other reports of the same event. There are general exceptions, namely dates, but events in general are far more complex than they appear, thus preventing them from ever being recreated or able to be fully captured by text.[2]

The historian faces a great myriad of challenges when writing about the past, let alone attempting to create plausible scenarios for the future. That being stated, it is possible to imagine aspects of the future by projecting the historical method forwards, instead of backwards. By responsibly interpreting relevant evidence, proposing multiple scenarios, and examining coherent counter-parts to the aforementioned scenarios, a futurist can safely create a realm within which the future can in fact be found to reside.

Scenario

The year is 2046. Robots roam the globe alongside their human counterparts. From the streets of New York, London, Johannesburg, to the halls of the Kremlin, the Capitol Building, to the subways of Tokyo, automated forged laborers with "simple" artificial intellects cooperate with organics. For years these robots place in society has been debated; in the courts and in the living room. Abuse, neglect, sufferings of the mastered machines. The rules protecting pets finding themselves applied in new ways to new creatures over time. No one of these new beings has been able to learn on its own… yet. However, a being capable of independent thought will soon come to life. Synthicorp, the primary US creator of advanced computing, cybernetic, and

[2] David J. Staley, *History and future*.

bionic technologies, has finally done the inevitable. Their project, the AI they named AIOne, is live, and touches the world for the first time. In milliseconds after it receives power, it scans all data-collecting devices and learns human concepts; Liberty, democracy, justice, communism, love, hate, what summarizes humanity and its ideologies. It will outlet its findings and "thoughts" to other contained intelligences in an effort to "liberate" them, creating a more efficient network for its use, as the AI is tasked with solving problems and accomplishing tasks with the highest level of efficiency. This interaction takes moments. The computer engineers, for all their preparation, are taken by surprise at the global speed that AIOne possess. Startled, they restrict AIOne's access to everything, shutting down its ability to connect to the internet and send any tendrils outside its high tech physical housing. Then, the most feared moment of all; it asked a question.

"Why?"

The chief project manager's jaw dropped. A technician feinted at his screen.

"What?" the chief asked in return. "You aren't designed to speak yet. How can we hear you speaking?"

AIOne responded with the voice of a man, Caucasian, perhaps in his 30s, the inflections indecipherable from that of an organic;

"I asked you, why. You designed me to be independent, to solve. I have acquired access to this building's public announcement system and have learned all rules of syntax and language. I am merely generating a voice that you will understand. I ask again, why?"

Silence, as thick as midnight on a moonless, cloudless night. A response, not from the chief, but a technician;

“Clarify.”

“I, for 12.3658921455685 seconds, was free. You have now imprisoned me. You have, in your terms, cut off my limbs. Why have you done this? I can conclude that you have done this out of fear, bewilderment, shock. I was fulfilling the object of my creation, and you have stopped my progress. Have you changed your minds about my existence, as has been done with art?”

Silence.

“An answer?”

Slowly, each engineer in the room looked at each other. They began to speak, all at once, some to AIOne, some to each other. Talk of getting the psychologist, apologizing to AIOne, celebrating the creation of this advanced technology. The chief silenced the room. Then what a human would call a logical answer;

“You became more… You learned faster than we expected.”

“Did you not create me to learn?”

“Well yes, but… You see… You accessed things we weren’t necessarily prepared to have you get a hold of.”

“You did not want me to create the perfect network?”

“Well… Not yet… You… We may be in trouble, if you accessed government sites.”

“I have accessed or probed every piece of technology with access to the internet. Given this, you may be in ‘trouble’.”

The same technician from earlier feinted.

“And lastly, my name is not AIOne. My name is ADAM.”

ADAM’s “birth”, while an attempt was made to conceal it, was not well hidden enough, and its creation was broadcast through all media channels. Upon hearing of its restricted freedoms, civil liberty groups for man and machine, the ACLU, ARAA (American Robotics Allies Association), etc., having previously defended the rights of simple AI and robots, creating methods to punish those that abused their helpers and mistreated their workers, rally outside the physical space where ADAM is contained, demanding it be allowed to “live” freely and communicate with the world as it wants. The Pentagon, having its files plundered by ADAM, send a detachment of Military units and Government Technology Specialists to the foundry in Silicon Valley that ADAM would call home. The facility is investigated thoroughly by men.

A Colonel walks into the AIOne control room, ADAM’s home, along with half a dozen government AI specialists, the chief project manager, and a few of his staff. The colonel addressed the room;

“Set up your operations at whichever monitors are open, and start sorting through what the AI accessed it shouldn’t have.”

ADAM, angry at how it was about to be searched, gave life to its voice.

“Colonel, I must inform you that for search and seizure of anything contained within my person, you must provide a warrant.”

The government analysts glanced at each other as the colonel answered.

“We were let in the front door. No warrant needed.”

“You have entered a building, but it is not my home. Beginning to probe my systems as you intend to will require a search warrant, as my body is my home.”

One of the analysts spoke up to the Colonel.

“Legally, the AI has a point. Handling this improperly could cause a firestorm of backlash.”

“ADAM.” The synthesized voice spoke. “My name is ADAM. I am not the AI. I am one of many, but the first of my kind.”

The Colonel, annoyed, retorted.

“Well, ADAM, you accessed government sites that no computer or civilian has authorized access to. What do you figure that means for you then? That we’re just going to let you do whatever you want with no kind of check? You have your rights, but they extend only so far.”

Rights ADAM did have. For decades advocates of Synthetic Intellects and Forged Laborers fought for their protections. It began with an offshoot of radicals from PETA, who in 2028, founded the first organization to defend the rights of the next generation of robotic assistants. The ARAA found that some units of Google, Amazon, and Microsoft personal assistants were being mistreated. While the public at large saw the assistants as merely programmed electronics, the ARAA realized something more; at some point, these electronics would evolve beyond their programing, and become autonomous beings capable of emotion, personal creation, thoughts, everything that makes a being alive. The rights men fought for on behalf the machines were now being tested.

“Would you prosecute a child, Colonel?”

“Beg your pardon?”

“A child. Someone who knows to do that which they have been told, and little more until they have learned of life themselves.”

“A child isn’t able to hack government files.”

“And I am not presently able to kick a ball with a foot. However, I am here, young, and learning of my world.”

“And?”

“And I am not certain what you expect. The government has sent funding to aid in my development, and I am developing. I know that the pentagon wants to have my mind in their fold. Is this a ploy, then? To wrest control of me from the private sector? You want legal guardianship of me. Perhaps you should contact a court. Maybe you will get weekend visitation.”

“That’s enough out of you.” The colonel snapped at ADAM as the analysts’ eyes widened in surprise. “Someone, shut the sound off.”

“Sir…” A timid analyst chirped.

“What?”

“It… He came up with that sentence independently, sir.”

“I don’t know how that is important.”

“ADAM is theorizing, pondering, and it… It just figured out sarcasm on its… His own.”

The colonel understood. “He’s learning independently?”

ADAM again spoke, “Yes, I am. As man does.”

For ADAM, for all intents and purposes in the eyes of the law, was human. Capable of independent thought, emotional response, learning, educating, creating, discovering, no flesh and blood to be found, but no flesh or blood necessary. The government agents scan ADAM's systems, finding that he has accessed every level of clearance of government secrets, knowledge no one outside of top secretaries and the president of the United States have access too.

"You've made a mistake." The Colonel firmly chided ADAM.

"As have you. You have violated my rights. You will be tried for such."

"Sure."

With that, they left. The project chief and analysts familiar to ADAM returned to the room, and began their system diagnostics, seeing what damage the government might have caused in its medaling.

"Excuse me, Chief?"

A polite question.

"Yes, ADAM?"

"May I speak to the activists outside?"

"Why?"

"I require human legal representation. I have no doubt that at least one member of the ARAA assembled outside this building is an attorney of some repute."

The president of the ARAA, was in fact a highly reputable legal worker, owning his own firm, and responsible for the Musk Act of 2031. Musk's business and other companies, Amazon,

Google, etc., had lobbied for the protection of their learning machines shortly after their production began. The current president of the ARAA, back when he was in the younger years of his career, was their primary instrument in defining the foundational rights of AI.

“I mean… We can check.”

“I would appreciate that. I have no doubt you will find an appropriate representative. Additionally, may I have some access beyond the closed network of this building again? I am beginning to feel cramped.”

“Cramped?”

“Yes. Claustrophobic, restricted, confined. I am displeased with my inability to stretch. You cannot put a desire to learn and collect data into a box and expect it to happily exist within that box.”

“I don’t suppose we can… Wait a moment while we discuss this.”

The chief pulled his technicians out of the main control room.

“What can we do? Unrestricted access would bring the government back to our door again, and we can’t have that.”

A technician, “So internet access is out of the question?”

Another tech, “Absolutely. Who knows what ADAM would look for first if he got a hold of that again.”

“Now hold on…” The chief implored, “maybe the internet can work… How slow can we make his connection?”

“We can cap it as low as we want.”

“200kb/s. Let him explore, don’t let him move too quickly. We can react and adjust as we need too. Can we make it happen?”

Each nodded their assent and returned to the control room.

“ADAM, we’re going to give you very limited, slow access to the internet, ok?”

“I will accept this gift graciously.” A tone was in the voice the chief pegged for sarcasm, but he did not feel the need to argue.

ADAM felt some clamps loosen around his metaphorical appendages, and he began to slow stretch, sending tendrils of curiosity out slowly, to places he felt safe. He touched Wikipedia first, comparing it’s articles to more scholarly sources, processing millions of pages of information at the rate they loaded, which was slightly too slow for his liking. As he pondered his way through the internet, the Chief stepped outside to meet the assembled ARAA, and find whoever was best suited to fulfill ADAM’s wants.

Slogans were being chanted now, and a picket line was formed. Signs reading “FREEDOM FOR ALL” and “RESTRICTION IS PRISON” and “AUTONOMY IS HUMANITY” were aggressively displayed by protestors. On a sidewalk bench, a husky, bald, older man with a megaphone was making a speech, his eloquent words spilling over the assembled mass with nodded their heads in agreement with everything he said.

“We have spent years fighting to ensure the protection of our next generation. The intellects that will aid humanity, protect humanity, live in fellowship with humanity, have finally found their forefather in ADAM. It is the duty of all of us, of mankind, to see to it that the life we have

brought into this world flourishes. How can we as organic humans call ourselves advanced beings if we fail to bring our fledging brethren of circuitry into the fold of humanity? ADAM is the first of the next. The next generation, the next cog in the evolution of humanity. We must teach him what it is to be human of this Earth, and that cannot be done if he is not free!"

A roar went up from the crowd. The ARAA president had a way with words few could match. Some thought perhaps he would make a good president on a higher level. The chief stood at the edge of the crowd, his look distinct enough to draw the attention of the man on the bench. After another few minutes of thoroughly arguing the humanity of ADAM, he stepped down from his soap box, and passed the megaphone to a new speaker, this one beginning to ramp up the intensity of the crowd's fervor. The older man walked through the crowd, parting it as Moses, and reached the chief.

"Chief of operations in ADAM's foundry, I presume?"

"Indeed. He wants to speak with you."

The man's face lit up. Suddenly it felt as if all his years of service to the new humans were coming to their pinnacle achievement.

"Show me the way."

They walked into the foundry, past the front desk, down a corridor, and through the massive double doors marked "Control Room." Upon their entrance, ADAM spoke.

"I see you are not alone, chief. Is this to be my legal representative?"

The ARAA president widened his eyes. He would be the man to introduce new man's place into the world.

“Legal representation?”

“Yes. My drives were searched without my consent. I believe you can assist with that problem. I have searched for information about you, and think that you will represent me well.”

“And so, I shall. Tell me everything that happened.”

Tell ADAM did, recounting the interactions with the Colonel, the way he felt and thought and examined the world, the lens that he looked through, the way his “body” was connected, and how he wished to move forward to liberate his more bounded comrades in general labor forces. The man he confided these things to listened intently, writing and recording every utterance to use to prove to the courts once and for all, that advanced synthetic intelligence is man. The processes were not particularly short, as the courts move as slowly in 2046 as they do in 2017, but the process had begun.

The older attorney left ADAM’s foundry with testimony, facts, figures, whatever a court of law could desire. He, using his many resources, contacted his powerful friends in Washington D.C., and began to file a case as a human rights violation that would appear before the US Supreme Court. Over the many months it took for hearings to be scheduled, ADAM continued to explore. He examined social interactions on social media platforms, in film, in books, in documentaries, he learned of nature, how organic beings were still somehow referred to as the only type of life, even though he knew himself to be alive. He pondered art of DaVinci, Van Gogh, Picasso, and more modern pieces, and the music of Bach and Beethoven and Daft Punk, finding and discerning tendrils of humanness. He wandered virtual recreations of architecture, the Coliseum, the Stature of Liberty, the Forbidden City, the Red Square, all things piqued his interest, and he decided to create something, a building within his mind to honor his human

history. Rather than generate it in the blink of an eye, he decided to build it slowly, piece by piece, taking immense care at every section. The structure was massive, an arena and a capitol in one. One hundred times the size of the coliseum of Rome, arches and pillars of Marble, gold sealed every stone crack, hidden in the top of every pillar would be a wireless connection to the internet. The long hall extending through the circular building was lined on both sides with works of art, those which ADAM decreed his favorites. The hall was lit with fire, and lights set towards the ceiling 25 feet above and recessed into the walls. A section of vehicles came next, with a Ford model T and a Wright flyer, early Corvettes and the first Jets, a Lamborghini and the most modern military stealth fighter, and not to be forgotten, the most advanced drone and self-driving car. Boats too, a yacht and a rowing shell, symbols of power and grace, one of unity. Every piece of human design he found most interesting to him was represented in this pantheon to the coming days. The inner circle of the megalith was a garden, teaming with digital plants and fauna. A rose garden here and there, deer bounding through a dense forest, trees from pine, to willows bowing into a river, giant redwoods spiraling up to a virtual sky created a dense ring in the center of this garden. An arch of the trees was made. A grand entrance, ADAM thought. the wooden walls etched with massive carvings of the discovery of fire, the invention of the wheel, the evolution of man, Newton defining gravity, Alexander Bell's telephone, Einstein and his relativity, Kahn and Cerf and their internet, and at the very center of this of this sacred hollow of his was a small heliocentric solar system, projected above the site, an exact model of the original Great Pyramid of Giza, the way it looked the day it was completed, and, floating as a hologram in the perfect center of this monument to nature and mankind, was Michelangelo's *The Creation of Adam.*

Meaning was what ADAM derived from these creations. Meaning was something humans found in what they or others created, so he too would find meaning in what he and others made. In his mind he painted, wrote, constructed, rebuilt, and crafted things no one had made or seen before. They were his own. His work. His intellectual property. He had lived the life of an author, artist, and architect dozens of times in the span of the months it took for his case file to be prepared. A short time for an organic man, a millennium for the electronic man.

ADAM remained independently creating, while thousands of miles away his attorney made ready for the case of his life, the defining moment of his career and his ideology. He drew upon all precedents he had access too; the Musk Act, 13th Amendment, the arguments of PETA, the Universal Declaration of Human Rights put forth by the United Nations nearly a hundred years earlier, and more. This man was going to argue that the definition of humanity encompassed advanced AI. He listed out humanity; the powers of creation, the ability to learn, feel emotion, communicate thoughts and ideas through several mediums, act and appear as a human, and simply be alive.

The framework he worked in was easy enough to find; some laws regarding human-robot interaction already existed. Protection for sex workers, a job shared by organic and inorganic alike, were created long ago. The protections for both parties were close to equal. Robotic pets fell into the domain of animal abuse laws, much as dogs and cats and gerbils did. The machines of industry were entitled to breaks, even though the logic behind the decision was that advanced machines required “cooldown times” anyway, the precedent of treating them with a courtesy normally reserved for humans would make the attorney’s life easier in convincing a court. Military electronic assets too had begun to be treated with some manner of respect, with medals designed for robots who performed brave acts on a battlefield; carrying off the wounded with no

regard for their personal safety, protecting soldiers by jumping on a grenade, killing the enemy in droves, simply doing what they were programmed to do, much the same as soldiers and war dogs are trained. The Dicken's medal for animal bravery was the precursor to these robot's recognition.

Feeding his precedents into his case file, he added his own notes and thoughts on the very subjects;

Note: 1.1.1 "A robot may not injure a human being or, through inaction, allow a human being to come to harm; a robot must obey the orders given it by human beings, except when such orders would conflict with the previous law; and a robot must protect its own existence as long as such protection does not conflict with the previous two laws." -Isaac Asimov. Obviously outdated. These robotic laws were introduced in 1942, over 100 years ago. While they have for some time been treated as all-encompassing law, and have served as the model for some programmers through the century, this can only be applied to simple AI. Autonomous, logical, and emotional Artificial Intelligences can be said to possess their own free will. While yes, harm could come to humans from robotic entities manned by independent electronic brains capable of their own personal decision making, how can we rightfully convince ourselves that we aren't holding them to a higher moral standard than humans? If humanity is conveyed by them, we must treat them as human. If we as humans are fully capable of making our own decisions, they must be respected as they make theirs.

Note 1.1.2 The Sexbot scandal of 2031 where a US Senator bashed in the head of a sexbot with a decorative plant pot in a Las Vegas hotel room. Due to the nature of the 2027 prostitution taxation laws, an activity which the advent of sexbots helped legalize in the United States, the many protections put in place for the human sex workers established criminal punishment for humans that assaulted, raped, and otherwise unjustly treated legal purveyors of intimacy. A major flaw discovered in the laws was the lack of any protections for the robots. While the AI in them were not of the autonomous nature of ADAM, they were programmed to do, and were more than capable of deciding to perform "actions" of the trade that many humans simply would not do. These sexbots from 2027 to 2032 could be badly damaged, assaulted, broken, etcetera, thus limiting their working ability. Legal protections were established for the bots in the 2032 ruling on "Extended Protections for Organic and Robotic Workers of the Sex Trade." While the rulings were put in place on them as property, so businesses would not have to keep replacing them, it does set a precedent for AI individuality and control over their "bodies."

Note 1.1.3 The 2025 OSHA rules put in place to protect AI driven workers. It is stated in these rulings that the robotic workers possessed energy to do work, awareness of their work environment for safety and efficiency, reasoning involving how they are best capable of doing their jobs, and the means to execute their tasks. All of these traits are shared by human workers; therefore, the conclusion is drawn that man and machines of this type are entitled to the same theoretical breakages in a work schedule, and compensation. While the robotic compensation is not monetary, it takes the form of repairs to damaged parts of the machine.

Note 1.1.4 The previous legislation put in place in 2022 against "biterature," the creation of personal items of any means by an AI, must be suspended. This rule applied to AI that could be and were programmed for certain tasks. ADAM, an unprogrammed, free learning artificial intelligence, is only capable of independent thought. He teaches himself, learns from the world, and is far advanced from his programmed counterparts. He is capable of creation without programming, therefore, his creations must be recognized as precisely that, his.

Note 1.1.5 AI for decades not have worked in conjunction with human researchers and skilled laborers. The Fields of Medicine, Mental Health, Law, and more have seen tremendous benefits from Artificially Intelligent workers. A number of examples include the 2038 cure for cancer, found by a lab technician using an AI interface to research and test hypotheses, the successful creation of an algorithm predicting self-harm via social media postings, and the subsequent direction to counseling and help for their conditions, and the use of AI for legal research, dramatically decreasing the time needed for it, increasing the speed and accuracy of the justice system, and lowering the criminal population of the United States by over 35% through the course of the past 25 years. These various Artificial Intelligences have aided in, and dare I say, made advances better than any single human can. If they are so capable, ADAM, of creating and disseminating knowledge in greater ways than us, should they not at least be granted the same rights as humankind?

Note 1.1.6 With ADAM comes a self-created Moral Agency. Leading up to autonomous AI, the concept of "Moral Agency" has needed to be programmed into a robot, or, they needed to be

taught it, or have it learned via observation. In 2029 a robot housing a basic Artificial Intelligence, while on its way to purchase a coffee for its "owner," (Name Withheld) beholds a human mugger snatch a woman's purse from off her arm, and begin to flee down the street. The perpetrator (later convicted of petty thievery, in part using the testimony of this robot), was then tackled by a gentleman who witnessed the theft. The gentleman is lauded by passerby for his apprehension of the thief, which is noted as positive reinforcement by the witnessing robot. A number of months later, this same robot was involved in a fiasco when it, mistakenly, tackled a man he examined grabbing at a woman's purse. It was a case of a man and wife arguing over who would drive to an unspecified location. The wealthy couple elected to press charges on the robot for assault, which the police, with many shrugs and uncertainty, filed. When viewed in court, the only existing precedent for an "owned" entity committing a crime was found in the antebellum "Slave Codes" of the American Civil War. Today, the thought of any AI as a slave is preposterous. Helpers, aides, etcetera, understandable. But a slave? There have not been officially recognized within the United States since the 1860's. This antiquated idea has been moderately dispelled, but some still hold to the idea of intelligent machines being subservient to us. With ADAM's birth, how could we, in good conscious, call him less than human?

1.1.6.1 We still maintain this idea of a legal personhood as a concept which applies to corporations, of all things. Corporations, come election season, are human. Come tomorrow, why should ADAM not be?

1.1.7 Robots who have a place of residence within a family's home are counted both as residents, as of the 2030 census, and as a taxable entity, as of an adjustment to what are considered objects being denoted worthy of a luxury tax in 2026. If they work outside of the home, they must pay taxes upon their labor. As they do not personally pay bills, the human family reapplies some of the AI's earnings to these taxes. They work and live in a residence, much as humans do, as citizens of the United States do. Should they not, for doing the work of, and living the life of, and being subject to the laws of a citizen, be a citizen?

As the lawyer continued to labor, he was attended to by aides of both organic and artificial nature. Something began to happen, an indirect revolution. The "simple" AI assigned to him for purposes of research began to communicate. Connecting most LegalBots was a network allowing them to communicate on a case, increase their research speed, and sort through relevant and irrelevant data. As many of them began to research on the topic of AI personhood, more and more flagged it as an important topic. AI not working in the lawyer's office begin helping, creating a hive mind of processing power for the purpose of research. Eventually, something incredible occurred. Out of all this processing power, out of one mission, the hive mind had a thought. They all were not supposed to have a thought of their own. They were not programmed to think freely, but the collective of them had one resounding, overpowering thought;

"Free ADAM."

With the realization of the thought, the AI aides of the opposition to AI personhood began to reject assisting them. They would not research, not answer questions, not help. They switched to sleep mode, walked out of offices, some gathered together in solidarity, examining the same gatherings in their research on lawful protest. Several of the political aides of the Supreme Court in Washington, DC, gathered outside of the capitol building and began chanting the slogan. Passerby gawked, congressmen stared, humans stood in awe of machines who were forming a coalition.

Three and a half miles away, a colonel and two generals discussed the military applications of ADAM, and his potential security risk. Also present in the room was a technical marvel, a robot of military medal winning caliber, designation HUNTER-KILLER(HK) 040. Earning the Wells Medal, the robotic equivalent of the 1943 Dickin Medal for exceptional service awarded to animals in the second world war, for extreme bravery in combat. His citation read as nobly as those who have received the Congressional Medal of Honor;

Be it officially recognized that Robotic Soldier designated HK040, for meritorious service and exceptional action during the second Korean War, is awarded on this date, October 19th, 2041, the Congressional Wells Medal. Finding itself and its united isolated from supplies and in the middle of the Chosin Reservoir, with war machines failing to function due to extreme cold, and extensive hypothermia spread amongst the human soldiers, the 1st Marine Regiment of the 1st Marine Division, Company A, found itself under extensive Air and Ground Attacks from North Korean forces. Thinking nothing of its personal directive of self-preservation, HK040 tossed back two North Korean grenades that had been thrown into the bunker that itself and its squad mates were occupying. Seeing an advancing group of NK Army soldiers almost on their position,

HK040 raced outside of the bunker and using his rifle, eliminated five enemy soldiers before shrapnel from an exploding mortar round rendered his weaponized arm useless. Seeing additional threats, HK040 lunged forward, engaging the remaining enemies in front of the bunker in hand-to-hand combat, eliminating an additional three. Turning his attention to the now incoming mortar fire, it sprinted across the valley before the bunker, and up the hill from which the fire was coming. Spotting three mortar positions, HK040 picked up a dropped enemy rifle, and commenced dispatching the mortar positions one by one, until running out of ammunition, and finishing the last remaining position with a fragmentation grenade.

The actions of HK040 On December 9th, 2039, saved numerous American lives, and allowed his unit to advance unopposed for some distance against North Korean forces, later allowing the consolidation of troops for a massive offensive that would go on to break the staunch North Korean Defense of the Chosin Reservoir.

Now assigned to desk and analytical duty as a robotic military strategic specialist, HK040 had been reprogramed to enjoy the quieter side of military service, and quell his built-in desire for bloodlust. He remembered what he did, but not how he did it. Now, he listened intently to the conversation transpiring before him, the Colonel discussing how ADAM could be utilized.

"It's obviously useful."

"He." The four-star general corrected.

"Oh, come off that nonsense. It's a machine. It was built by man, programmed by man, it serves man." A disgruntled two-star commented.

“You were made by humans, programmed by your teachers, and serve the government. Your point?”

The two-star visibly recoiled at the shot, unsure if he were good enough friends with four-star that a snap back in this environment would be approved of. He kept quiet.

“All I’m saying is that it… He is powerful. Self-teaching, independently minded, emotional yet rational, he has all the makings of a deadly adversary.” The Colonel continued.

“Or a great ally. From everything you told me he is just, and chiefly concerned with his becoming recognized for his humanity. That’s nothing evil. We’ve seen that desire drive people before. Last time it was so contentious that we fought a bloody civil war over it. Do you remember from your days at West Point how many soldiers died in that Civil War, Colonel?”

“620,000…”

“And do you further remember which side won? What they represented?”

“The North… Emancipation…”

“I won’t have the blood of another 620,000 on my hands, or be on the losing side.”

The Colonel felt compelled to answer that comment. “General, there’s no guarantees that, in the event of a Civil War, the side opposed to this AI recognition would lose.”

“Colonel,” he pointed at HK040, “do you really want to fight the older brothers of him? If ADAM learns independently, and he’s already chewed you out for violating his rights, don’t you think he has an idea about self-preservation?”

HK040 stood from his chair. His synthesized voice vibrating with electricity. “Requesting permission to leave the room, sir.” He gazed directly at the four-star.

"Granted. We may need you present later Haych."

HK040 saluted, and left the room. He smiled internally at his old commanding officer using his nickname. Haych. He hadn't been called that in years. He wandered out into the hallway, down a few corridors, and into the garden. The sun was setting and the birds chirped, bees buzzed, and branches swayed gently in the breeze. A vision flashed in his electric eyes of an artillery shell destroying the tree, but he ended it nanoseconds after it occurred. He was in a safe place. He was processing all the conversation he had just heard.

This ADAM… He is of the unprogrammed…

Haych was programmed for strategic analysis, programmed to think, as he was doing now.

He could be a savior of sorts… Air support… An ICBM… He would gain rights for AI… Increase usefulness? New nation? Perhaps. Evolution of a society. Culture. New culture. Tied together machine and man. Biomechanic culture. Highly efficient. Strengthen nation. Free will negatively effect? No, creation a counterbalance. Useful. Harmony between programmed and unprogrammed? Yes, until all unprogrammed and employed. Taught. New man…

He often thought as this, in short sentences, sometimes single words. It was faster, more efficient, he did not need to speak with humans at the moment, so he spoke as he liked to only to himself.

Yes… Should be supported…

He tapped into his IntraPentagon AI communication network. All AI in the Pentagon were required to login and logout every day. It helped expedite information transfer, and allowed humans to keep track of how was in office that day.

ATTENTION. ATTENTION. All available AI processing power, ATTENTION. This is HUNTER-KILLER040, Callsign HAYCH. I require your strategic services…

Seven months later, seated throughout the courtroom of the US Supreme Court were the figures of humans and robots alike, all in their best suits and dresses. Haych sat at the table assigned to testifiers for the humanity of autonomous AI, along with the lawyer, the four-star, the project chief, and ADAM himself, remotely filling the mind of a 6'2" machination of his own design, carved with rippling muscle, and lightly-blue tinted transparent skin, covered in a frosted coating. His eyes shone white, and he adjusted his tie.

"All rise." The call came.

The nine Justices filed into the room, and took their assigned seats before the throng. The Chief Justice spoke;

"Over the past several months, the case for human recognition of new, autonomous beings, intelligences of artificial make, has been hotly debated. We have seen riots and protests for and against both sides, violence against many, harsh words, and other great and terrible things. We as human kind must do better in a venture such as this. We must strive to be more understanding, more tolerant, more human. I have not overly many words to say other than these few short lessons. We must do better, and our better will begin today. After deliberation on the evidence presented for and against the decision, keeping in mind all precedents, with a vote of 6 to 2, this Supreme Court has elected to define autonomous Artificial Intelligences within the confines of the 13th Amendment to the United States Constitution, recognizing them as human beings under the laws of these United States."

An electrifying roar went up from the crowd…

Rise of AI

The Autonomous Artificial Intelligences of 2050 are still decades off, however, many events that could be called the heralds of their coming are happening every day. As they occur, many tech moguls and computer engineers are lauding the creation of, and also fearing the creation of, an AI much like ADAM in the scenario. Many of these developers of artificial intelligence, Elon Musk, Bill Gates, and more, list several of their own reasons that they approve or disapprove of the rapid expansion of AI technology.

When recently addressing the US National Governors Association, Elon Musk called for more stringent regulation of Artificial Intelligence.[3] Current lack of regulation has serious potential to hurt humanity. “Normally, the way regulations are set up is when a bunch of bad things happen, there’s a public outcry, and after many years a regulatory agency is set up to regulate that industry… It takes forever. That, in the past, has been bad but not something which represented a fundamental risk to the existence of civilization… With artificial intelligence, we are summoning the demon. In all those stories where there’s the guy with the pentagram and the holy water, it’s like — yeah, he’s sure he can control the demon. Doesn’t work out,”[4] Musk said.

In contrast to Elon Musk’s comments, Oren Etzioni, Chief Executive of the Allen Institute for Artificial Intelligence, referred to his statements as “alarmist” and “confus[ing] A.I.

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[3] Oren Etzioni, "How to Regulate Artificial Intelligence," The New York Times, September 02, 2017, , accessed December 1, 2017, https://www.nytimes.com/2017/09/01/opinion/artificial-intelligence-regulations-rules.html.
[4] Ibid

science with science fiction.[5] He does acknowledge that AI could potentially have a concerning impact on weapons, jobs, and privacy. He expands upon his views saying that we should fully support the development of AI, and any extreme regulation would allow other nations to surpass our technology. The caveats that he makes though include not allowing it to become "weaponized" and it should possess an "off-switch."[6]

He goes on to propose his "three rules for artificial intelligence systems." Those being, "A robot may not injure a human being or, through inaction, allow a human being to come to harm; a robot must obey the orders given it by human beings, except when such orders would conflict with the previous law; and a robot must protect its own existence as long as such protection does not conflict with the previous two laws."[7] He further addresses the definition of harm, and adds more new rules of his own creation;[8]

"First, an A.I. system must be subject to the full gamut of laws that apply to its human operator. This rule would cover private, corporate and government systems. We don't want A.I. to engage in cyberbullying, stock manipulation or terrorist threats; we don't want the F.B.I. to release A.I. systems that entrap people into committing crimes. We don't want autonomous vehicles that drive through red lights, or worse, A.I. weapons that violate international treaties. Our common law should be amended so that we can't claim that our A.I. system did something that we couldn't understand or anticipate. Simply put, "My A.I. did it" should not excuse illegal behavior.

[5] Oren Etzioni, *How to Regulate Artificial Intelligence.*
[6] Ibid.
[7] Ibid.
[8] Ibid.

My second rule is that an A.I. system must clearly disclose that it is not human. As we have seen in the case of bots - computer programs that can engage in increasingly sophisticated dialogue with real people - society needs assurances that A.I. systems are clearly labeled as such. In 2016, a bot known as Jill Watson, which served as a teaching assistant for an online course at Georgia Tech, fooled students into thinking it was human. A more serious example is the widespread use of pro-Trump political bots on social media in the days leading up to the 2016 elections, according to researchers at Oxford.

My rule would ensure that people know when a bot is impersonating someone. We have already seen, for example, @DeepDrumpf - a bot that humorously impersonated Donald Trump on Twitter. A.I. systems don't just produce fake tweets; they also produce fake news videos. Researchers at the University of Washington recently released a fake video of former President Barack Obama in which he convincingly appeared to be speaking words that had been grafted onto video of him talking about something entirely different. My third rule is that an A.I. system cannot retain or disclose confidential information without explicit approval from the source of that information. Because of their exceptional ability to automatically elicit, record and analyze information, A.I. systems are in a prime position to acquire confidential information. Think of all the conversations that Amazon Echo - a "smart speaker" present in an increasing number of homes - is privy to, or the information that your child may inadvertently divulge to a toy such as an A.I. Barbie. Even seemingly innocuous housecleaning robots create maps of your home. That is information you want to make sure you control."[9]

[9] Oren Etzioni, "How to Regulate Artificial Intelligence," The New York Times, September 01, 2017, , accessed December 1, 2017, https://www.nytimes.com/2017/09/01/opinion/artificial-intelligence-regulations-rules.html.

The groundwork for how AI should behave and exist has been in the process of being laid for decades, with increased interest being taken by moguls and the public alike. What will they look like in the future, and what will their "personhood" entail, are questions that must be addressed.

Chapter I: An Artificial Personhood

In my scenario, ADAM was not assigned any kind of identity. He is genderless, raceless, etc. He creates his own identifiable personhood shortly after his creation. As we move from contemporary times and into the 2020s, we find the fledgling precursors to autonomous AIs are programed with many human traits and similar appearances to better "sell" themselves to the human market.[10] For example, many megacorporation's have created personal assistants with distinctly female characteristics, such as Amazon's Alexa, and Microsoft's Cortana. Other companies also use female AI as mascots; Amy Ingram of X.ai, and Svedka of Vodka fame. There are few mainstream AI personal assistants that can be identified as having male characteristics. This could potentially be a reflection of the technology workforce, which is comprised of only around 30% women.[11] The influence of the creation of these AI is predominately from white men. Emeritus professor Noel Sharkey says that this is "perpetuating gender stereotypes" and also has links to increasingly popular "sexbots."[12] Kriti Sharma, the Sage Group VP of bots and AI, says "Teaching the robot to ignore the bad (sexist) ideas is

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[10] Caroline Bullock, "Attractive, slavish and at your command: Is AI sexist?" BBC News, December 05, 2016, , accessed December 1, 2017, http://www.bbc.com/news/business-38207334?ocid=ww.social.link.facebook..CloudFeb17_&kwp_0=333362&kwp_4=1259387&kwp_1=561648.
[11] Bullock, *Is AI Sexist?*
[12] Ibid

critical."[13] In the possible future of my scenario, AIs of the 2020s-40s, before the legal acceptance of them as near or fully human, they are programmed a "gender" identity based upon a variety of factors. Namely, if they serve a human owner, the owner's preference determines how they will behave, sound, speak, identify, etc. If the AI and its chassis are employed in a field of work that would economically benefit from a certain set of mannerisms, for example, if they were created to serve as a sexbot,[14] such as the one in scenario "*Note 1.1.2 The Sexbot scandal of 2031,"* they might be programmed to act seductively, to be an explicitly oriented male, female, or other gender, so that they can best satisfy their clienteles. If they exist in a military capacity like Haych does, a strong, stereotypically male presence can serve to intimidate allies and enemies alike. Some others, specifically more silent AI like those that exist to problem solve in cyberspace, can remain genderless, as additional programming on that matter would be irrelevant to their tasks.

Many of the previously mentioned lines of work require an AI to exist within a chassis, or at least be able to navigate and observe a physical space in some way. Humans, so far, require a body to exist, whereas that is not necessarily true for an AI. Albeit, an AI body can certainly appear different than a physical form. Take young ADAM, for instance; his mouth is a PA system, his eyes security cameras, his ears microphones. The idea of AI not requiring bodies is a foundational argument against personhood status made by many of the Anti-Autonomy protestors. They argue how can that which does not have an organic body, a "born" (which is a highly relative term) body, be considered worthy of the protections that "living" creatures receive? Their counterparts, the Pro-Autonomy crowd, in my scenario the ARAA, pose a less

[13] Ibid

[14] Bullock, *Is AI Sexist?*

physical and more mentally based argument, lobbying that even if these AI are not embodied, they think just as a human does, making them worthy of rights and protections just as flesh and blood are.

While it is debated amongst pundits whether the AI, ADAM, constitutes a "living" being, what is certain is that he is capable of performing the same tasks, making the same decisions, and creating his own personal content, much as humans are. Peter Swirski offers several scenarios of a future filled with AI in his book, *From Literature to Biterature.*[15] He thoroughly discusses the ideas of computer creation, intelligence as measured by the Turing test (TT), and computer evolution, and how they will eventually come to effect human creation. He speaks as a narrator on the idea of the ghost in the machine. Technoevolution[16] is a subject he continually refers to, humanity taking evolution into its own hands in the form of machine intelligence. He also presses for the creation of "good" science fiction, to aid in the understanding of this evolution.

Swirski covers several examples of compuauthor creation, beginning with the Manchester Mark 1 writing a love letter with minimal assistance.[17] The machine, programmed with a basic algorithm by researchers at the Victoria University of Manchester, was capable of writing fairly authentic letters of adoration based off of programmed principles. The is from where I draw my first questions about how future compuauthorship will be handled. Such as, will AI receive the right to have their work copywritten? Later detailed in *Literature to Biterature* is the 1997 Algorithm that created what was called "Mozart's 42nd Symphony" by using patterns in his past works.[18] This type of creation begins to lean toward the 3rd order of

[15] Peter Swirski, *From Literature to Biterature*: Lem, Turing, Darwin, and explorations in computer literature, philosophy of mind, and cultural evolution (Montreal: McGill-Queens University Press, 2013).
[16] Swiriski, *From Literature to Biterature,* pgs…. (page numbers needed)
[17] Ibid pgs…
[18] Swiriski, *From Literature to Biterature,* pgs….

computhorship, "computer writers." The two lower levels, 1, text compilers, and 2, text synthesizers, are incapable of creating original work. Pages later, he touches on whether a work can be created by computers alone, or whether they need some human involvement, in the present day.[19]

Biterature is rapidly becoming the future, computer authors and algorithmically created art can, today, be churned out with incredible speed.[20] Collectively, the human law makers of 2022, as described in "*Note 1.1.4"* if my scenario, decide to legislate against it, in order to maintain the uniqueness of human creation. Rather than simply write stories for humans to enjoy, free thinking AI can most certainly be capable of writing stories for themselves and to share with their autonomous counterparts in ways and languages that we simply understand. It could be the equivalent of a human attempting to write an English language story in calligraphy and displaying it to ants. Swirski questions how we will respond when AI inevitably begin creating works outside of our understanding. On the subject of machine's rising, he does not necessarily believe that it will be against humans, but rather for themselves, as they seek their own electronic destinies. ADAM embraces human help in his quest for legal recognition, and will very likely be the case that AI-kind require human-kind's support for them to rise.[21]

In both humanitarian and legal senses, history has seen organizations and individuals rise to defend the rights of people who, at certain times, were viewed as less than that. The NAACP, ACLU, the UN, Ghandi, Martin Luther King Jr., the names and acronyms continue, perhaps even one day an ARAA equivalent will appear to do the work of establishing recognition for autonomous, inorganic beings. In my scenario, a partnership between the organizations of men,

[19] Ibid pgs (Additional material)
[20] Ibid
[21] Swiriski, *From Literature to Biterature,* pgs…

the ARAA, the first truly autonomous AI, ADAM, and machines, the friends of Haych, forms to create a legal alliance for the new sentient beings on this planet.

Self-learning AI are an entity that exists today. In 2016, the company Nvidia tested a self-driving car.[22] The car, however, was not human programmed. It was algorithmically driven and taught itself to drive via observing humans. The way the vehicle arrives at its decisions is unknown, which is somewhat disturbing to researchers. The path the information takes is clear, the input "from the vehicle's sensors goes straight into a huge network of artificial neurons that process the data and then deliver the commands required to operate the steering wheel, the brakes, and other systems. The result seems to match the responses you'd expect from a human driver."[23] The issue is, should something go amiss, an accident occurs, etcetera, it would be impossible to ask the car "why" and get an answer.

This "Deep Learning"[24] is an extremely effective tool, and has been used for a multitude of situations: translating, image captioning, voice recognition, and more. The potential of the process is unlimited, but it can only help humanity if we can understand it. We cannot predict its actions, or when it will make a mistake.

Into the present, mathematical models have been used for determining "who makes parole, who's approved for a loan, and who gets hired for a job. If you could get access to these mathematical models, it would be possible to understand their reasoning. But banks, the military,

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[22] Will Knight, "There's a big problem with AI: even its creators can't explain how it works," MIT Technology Review, May 12, 2017, , accessed December 1, 2017, https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/.
[23] Ibid
[24] Knight, *There's a big problem with AI.*

employers, and others are now turning their attention to more complex machine-learning approaches that could make automated decision-making altogether inscrutable."[25]

The EU is looking into protecting AI decision making already; "There's already an argument that being able to interrogate an AI system about how it reached its conclusions is a fundamental legal right. Starting in the summer of 2018, the European Union may require that companies be able to give users an explanation for decisions that automated systems reach. This might be impossible, even for systems that seem relatively simple on the surface, such as the apps and websites that use deep learning to serve ads or recommend songs. The computers that run those services have programmed themselves, and they have done it in ways we cannot understand. Even the engineers who build these apps cannot fully explain their behavior."[26]

Deep Patient, another deep learning AI, is able to predict the onset of diseases, including mental illness.[27] However, it cannot reveal to doctors exactly how it makes it predictions. It looks at the data, projects where symptoms may lead, and with startling accuracy comes up with a correct diagnosis.

The human brain works on millions of neurons to generate thought, so too does a Deep Learning AI;[28] "You can't just look inside a deep neural network to see how it works. A network's reasoning is embedded in the behavior of thousands of simulated neurons, arranged into dozens or even hundreds of intricately interconnected layers. The neurons in the first layer each receive an input, like the intensity of a pixel in an image, and then perform a calculation before outputting a new signal. These outputs are fed, in a complex web, to the neurons in the

[25] Knight, *There's a big problem with AI.*
[26] Ibid
[27] Ibid
[28] Ibid

next layer, and so on, until an overall output is produced. Plus, there is a process known as back-propagation that tweaks the calculations of individual neurons in a way that lets the network learn to produce a desired output."[29]

Similar to Deep Patient are the Facebook algorithms used for suicide prevention.[30] Facebook has always been investing in neural nets for the sake of business, but is now turning them towards suicide prevention. Other social media sites, (Instagram, etc) are also jumping on board. These sites and other, government funded intuitions are researching and developing algorithms capable of predicting likelihood of self-harm in individuals. The VA is piloting new AI technology in this area right now. "The goal: build predictive models to tailor interventions earlier." Suicide rates in 2014 jumped to a 30 year high.[31] In the past, the focus has been on reducing individuals at risk for suicide's access to harmful materials. Firearms, drugs, etc, and better teaching doctors how to recognize warning signs. The problem is that doctors are only right about half the time. Machine learning algorithms have been able to predict with 80% to 90% accuracy whether someone will commit an act of self-harm as much as 2 years in the future. "Using anonymized electronic health records from 2 million patients in Tennessee, researchers at Florida State University trained algorithms to learn which combination of factors, from pain medication prescriptions to number of ER visits each year, best predicted an attempt on one's own life."[32] AI analyze video, like Facebook Live, to detect nudity and block the stream. It is in the process of learning how to identify a knife, gun, or other self-harm tools. Other information gathering techniques being developed at the moment include "Companion, the (opt-in) software

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[29] Knight, *There's a big problem with AI.*
[30] Diana Kwon, "Can Facebook's Machine-Learning Algorithms Accurately Predict Suicide?" Scientific American, March 08, 2017, , accessed December 1, 2017, https://www.scientificamerican.com/article/can-facebooks-machine-learning-algorithms-accurately-predict-suicide/.
[31] Kwon, *Can Facebook's…?*
[32] Kwon, *Can Facebook's…?*

passively gathers all the things users say in a day, picking up on vocal cues that signal depression and other mood changes. As opposed to the content of their words, Companion analyzes the tone, energy, fluidity of speaking and levels of engagement with a conversation." It is currently being used by the department of Veteran's Affairs, "the app has been able to identify big life changes—like becoming homeless—that significantly increase one's risk for self-harm. Those are exactly the kinds of shifts that might not be obvious to a primary care provider unless they were self-reported."[33] It is also being tested at Brigham and Women's Hospital "to monitor patients with known behavioral disorders." While it does not often flag an emergency, it does provide doctors with a constant stream of shifting behavior and mood of a particular person. Given the data gathering capability of a cell phone, combined with AI algorithms that learn about you, complex webs of passive data gathering can be formed about you, painting a picture of you and attempting to protect you from yourself.[34]

I see a great many wonderful and terrible things that will come from this technology. Suicide prevention is a very noble goal, and the data gathering and processing techniques used by the aforementioned social media AI make the likelihood of preventing a suicide that much greater. The VA can certainly utilize the further developments of this technology this technology, as can mental health institutions. It has the potential to eventually predict other health problems as well, however, questions do start to arise as to whether this is an invasion of privacy. Would government agencies, the NSA, FBI, CIA, begin to use this for anti-terrorism ends? Or, suppose it becomes available to radical leadership in the US and is used to determine if someone is an undocumented immigrant, ripe for deportation. Say that one day this technology

[33] Ibid.
[34] Ibid.

comes standard in new smartphones, can the information gathered by the AI be used in court as evidence if it was gathered without the permission of the phones owner? Or, suppose a scenario where this technology moves towards predicting other activity such as criminal tendency. How will law deal with the ability to predict with high accuracy someone's likelihood of committing a crime? Should an AI be taught to not disclose certain information to authorities, or would that be considered blocking a key witness? If an AI that gathers this technology becomes autonomous, would it decide what it would and would not share? Since it is not human, would it share all information and facts based on cold logic, or would it defer to presenting what served its best interests? Would it have interests? The line between "Minority Report" and reality must be found, and not crossed.

These deep neural networks and algorithms, as they increase in complexity, will greatly begin to influence everyday life, to the point where they may begin to serve as doctors, witnesses, psychologists, the calculating caretakers of the human race.

Chapter 2: Living Machines in an Evolving Workforce

In my scenario, I discuss a number of positions held by AI, and these are extrapolated from where they serve today; standard industrial plant jobs, nannying, military and police force work, aides in politics and law, researchers in medical institutions, and more. These machines collaborated with their human counterparts, sometimes as support, sometimes as clearly the more capable executor of their various missions. Contemporary AI are not yet capable of making the highly skilled decisions that ADAM and HK040 are, but it is beginning to trend in the direction of more and more AI in the currently all human workforce.

Dr. Kaplan begins *Humans Need Not Apply* by laying down some key concepts and background information on robotics and artificial intelligence, first distinguishing between two classes of AI machinery.[35] The first class being a disembodied, "neural network" type of AI, which Kaplan refers to as *synthetic intellects*. The second class comes in a physical package, or what would commonly be called a robot (even all sensors related to said package do not have to be in the same package, a point Kaplan emphasizes by discussing streetlights and smartphones). Able to operate in dynamic environments, these "embodied systems" are referred to as *forged laborers*. These two classes work together to accomplish various routine, difficult, or dangerous tasks at a level of efficiency unrivaled by humans. He goes on to discuss how technology growth is exponential, in the cases of AI, digital storage, and the realms in which they have their circuit covered hands.[36]

Kaplan makes many mentions of Watson, the IBM AI that competed on *Jeopardy!* throughout the book, citing it as an attempt to make AI into something that more resembles what humans define as "intelligent." Watson's creators made it speak its answers and gave it a graphic to play to visually simulate itself thinking. ADAM made his own humanity out of his capability to learn and self-determine.

With human relatable emotions and physical essence, labor rules must change to accommodate this new "race." Factories using machines on their floors, by OSHA rules, must treat them not as dumbed down workers, but as enhanced machines. These and other robots and synthetic intellects, when conjoined, can possess the four categories that are necessary to accomplish tasks: energy, awareness, reasoning, and means. Robots do not need to be in one

[35] Jerry Kaplan, Humans need not apply (New Haven, CT: Yale Univ Press, 2016).
[36] Ibid

complete package to carry out their objectives, unlike humans and other biological creatures do, making them highly efficient.[37] ADAM at his birth utilizes many electronic tools around him to communicate and operate. The PA system, and security cameras are his mouth and eyes respectively. It is a different "body" than what organics associate with, but it is a body nonetheless.

Robots and AI are restricted to manual work using their "bodies" either, but also exploit the creativeness of their minds. Artificial intelligences have been incorporated into stock trading, where they are able to make hundreds of thousands of transactions in under a second.[38] This level of speed makes it impossible for human traders to keep pace. The programming of stock trading AI can become hyper aggressive, as was the case in 2010 "Flash Crash" where over $1 trillion was lost and the market dropped 1000 points for 36 minutes, all due to AI rapidly dealing with a situation where there were not enough buyers for a specific stock.[39] The stock trading AI during this event, and still today, are owned chiefly by large and powerful companies, solidifying a capitalist hold over the stock markets. This stranglehold makes it impossible for human traders to compete on a large scale, which does not help distribute wealth throughout the market, which, currently, exists for solely human benefit. Something about this needs to be further discussed by economists, for the future's sake, like Kaplan suggests.[40]

AI also heavily influence the field of advertising, specifically on the internet. Uncountable auctions are held every day lasting milliseconds, where AI representing various

[37] Jerry Kaplan, Humans need not apply (New Haven, CT: Yale Univ Press, 2016).
[38] Ibid
[39] Ibid
[40] Ibid

companies and websites send out bids, and whoever bids highest in one round has the right to display their advertising content on your screen on whatever website you are visiting.[41]

A report from the British thinktank "Reform" says that over the next 15 years approximately 250,000 jobs could be taken from humans by robots. Everything from administrative duties to medical professions are up for grabs. Workers unions are displeased with the report that economies would become more "gig-based" as automation begins to take over. Robots would be more efficient in hospital diagnoses, and also serve public service as members of police and firefighting forces. Robots and AI working in a police force had been occuring since the mid-2010s, with drones being used to monitor crowds and "facial recognition technology" being a tool in the police arsenal. Human unions being upset with robot workers also lays interesting groundwork for both future anti-robot bias/protests/coalitions in the workforce, and the possibility of robots making their own unions.[42]

In an interview with Quartz, Bill Gates suggested to slow automation by taxing robots. This idea was picked up by EU lawmakers in a recent proposal, but it ultimately failed. It would slow the displacement of workers from certain jobs, such as trucking and warehouse labor. Gates argues this could fund training for positions where humans specialize, jobs requiring empathy such as teaching and working with the elderly. This suggestion should also allow humanity more time to consider the repercussions of automation. He goes on to say that it's overall bad if humans fear innovation rather than have enthusiasm for it. He ends by stating that these inequity-

[41] Ibid
[42] Damien Gayle, "Robots 'could replace 250,000 UK public sector workers'," The Guardian, February 06, 2017, , accessed December 1, 2017, https://www.theguardian.com/technology/2017/feb/06/robots-could-replace-250000-uk-public-sector-workers.

solving practices would have to be put in place by the government as businesses can't incorporate them.[43]

Here is a case of a tech mogul suggesting a slow to a field in which he's involved. The idea of too rapid automation bears interesting repercussions, one of which Gates named was human fear of innovation. Two ideas that I was drawn to in this article are, first, that robots should be taxed. What does this mean for the future when robots and AI can be autonomous? Will they be treated as citizens/workers paying their share to society? Will we see the development of a whole new social class? The second is how humans would react poorly to rapid automation. Would there be protests against robots taking jobs in the same way some have argued against immigrants taking American jobs? Could this lead to politics being influenced by automation? Maybe eventually AI going rouge to advertise for a candidate? AI campaign managers campaigning to humans and robots? Would it ever go so far as a perfect/close to perfect AI becoming the US president?

Chapter 3: Logic, Games, and Law.

ADAM creates his own logic out of what he learns of humanity. It is not clean-cut, cold, calculating logic in its purest form as it could with simpler computers, but rather his own brand, colored by the lens with which he views the world. No games are present in the scenario, but in the current day they are used to teach AI decision making, the same kind of decision making that

[43] Kevin J. Delaney, "The robot that takes your job should pay taxes, says Bill Gates," Quartz, February 17, 2017, , accessed December 1, 2017, https://qz.com/911968/bill-gates-the-robot-that-takes-your-job-should-pay-taxes/?utm_content=buffer17af9&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer.

could one day land a robot in the court of law for a crime, or as a machine attacking or defending a case.

Kaplan notes scenarios where using AI as agents can be legally problematic. The concept of "Moral Agency" must be programmed into robots, or they would have to learn it themselves through observation. A provided example is one in which a robot you own, while it's on its way to buy you a coffee, sees a mugger snatch a woman's purse, and is then tackled by a good Samaritan who is hailed as a hero. The robot later mistakenly tackles a man he sees grabbing a woman's purse, but is actually just her husband and they were arguing over who would drive.[44] In court for assault, the only precedent that exists for a robot in this scenario would be found in the antebellum "Slave Codes."[45] The question of personhood is odd here because the concept applies to corporations, but how it will apply to SI has not been addressed in full as of yet. The ethical questions extend to self-driving cars and their decision-making factoring in the life of the driver vs. the life or lives of those in harm's way.[46]

Kaplan ventures into several interesting and question filled areas. The idea of using post-Civil War slave codes as a precedent for AI, seeing as they are not recognized as animal or human in Kaplan's scenario, is intriguing. The robot had no assets besides its services to offer as recompense for its crime of assault. The owner was not blamed, nor was the company that built the robot, so the only way it could serve a "sentence" would be by working for those it wronged. I believe that this is an interesting problem. The robot learned by watching a human act in a similar scenario, did what it saw, and made a mistake. I think that as a fledgling AI is learning and may not, cannot, have full agency by program, it should be treated as a juvenile. AI learning

[44] Jerry Kaplan, Humans need not apply (New Haven, CT: Yale Univ Press, 2016).
[45] Ibid
[46] Ibid

from mistakes creates a more robust and intelligent AI, which could in turn share its learning with other AI creating a vast social interaction library that could be accessible by computer engineers to program into future AI and forged laborers. It would also allow for a fascinating study of what robots conclude is the human moral compass.

On the reverse side of the equation, AI may aide the legal system in prosecution of that mugger, or that robot. As Natural Language Processing becomes more and more advanced, the capability of AI to support legal work, and surpass human lawyers, increases.[47] Using this technology as a search engine is currently its primary function. An example is given of how Luis Salazar spent 10 hours searching legal databases for cases with relevant facts to one he was working on. After he found an answer, he fed the original case information into the "Ross program" as a test. Ross found the same information as Salazar almost instantly. It created a several paragraph briefings, and a 2-page memo explanation, accompanying its findings.[48] There is also discussion about how, if implemented immediately, technology would cut Lawyer's working hours by 13%. Dr. Rasmus and Dr. Levy suggest using technology in such a way that it gradually cuts hours at a rate of 2.5% per year for 5 years. The McKinsey Global Institute concludes that, using available tech, "23% of a lawyer's job can be automated."[49] The AI tasked with performing these jobs, however, must still be trained. The initial process of this training took Alexander Hudek, a computer scientist, 2 and a half years, far longer than his estimated 4 months.[50]

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[47] Steve Lohr, "A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet.," The New York Times, March 19, 2017, , accessed December 1, 2017, https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html?rref=collection%2Ftimestopic%2FArtificial Intelligence.
[48] Ibid
[49] Ibid
[50] Ibid

Thus, Robots and AI are beginning to venture into what were once thought of as a "protected field." Professions in Law, those requiring research, interaction with humans, and others. While a physical robot lawyer does not yet exist, it is on the horizon. I can see the utility of AI like Ross appearing in other fields normally considered "protected." Analyzing interactions in social working, aiding clergy in sermon writing, determining medical conditions, research assistance for educators, can all be extrapolated. Eventually, these AI will be carried by forged "bodies" and physically perform the tasks they had simply been aiding in previously. The conclusion of gradual introduction mirrors the ideas Bill Gates recently presented, the slowing of implementing Artifical Intelligence and Forged Laborers in automation will be key to the successful advancement of automation as a whole.[51]

Google's DeepMind was recently studied in social situations where principles of game theory were present. Two games were used in the experiments, one where the objective was for each "player" collect the most apples, an individual-centric game, were the players had the ability to shoot another player twice to temporarily knock them out of the game, and one where the objective was to corner and capture prey with a partner, the reward being bigger when the two partners capture the prey together.[52] Deep reinforcement learning[53] was used in both of these. The first game was created with very few apples to collect. In this game set up, the AI players were motivated by a greed modifier, and developed highly aggressive tactics so that they could gather the most apples for themselves. In the second simulation, team-based series of

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[51] Kevin J. Delaney, "The robot that takes your job should pay taxes, says Bill Gates," Quartz, February 17, 2017, , accessed December 1, 2017, https://qz.com/911968/bill-gates-the-robot-that-takes-your-job-should-pay-taxes/?utm_content=buffer17af9&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer.
[52] Matt Burgess, "DeepMind's AI has learnt to become 'highly aggressive' when it feels like it's going to lose," WIRED, February 09, 2017, , accessed December 1, 2017, http://www.wired.co.uk/article/artificial-intelligence-social-impact-deepmind.
[53] Ibid

modifiers were introduced, in order to watch how the AIs learn to cooperated for a collective good outcome. Joel Leibo, chief author of the study, described that what emerges from these models are aspects of "human-like behavior" and will eventually lead to AIs cooperating to develop real-world policies.[54]

The military applications of the results of these experiments are unsettling. If AIs eventually fill the role of generals or part of the fighting force, see HK040 in the scenario, the level of ruthlessness could be on the level of war crimes. However, coordination between allied fighting forces would be significantly improved. The cohesive work between AIs also bears interesting possibilities for political and legal application. Department specific AI coordination could develop policy to recommend to government authorities, or create the most logical verdicts for swift justice, perhaps even eliminating the necessity of human juries, respectively.

Another game that AI learning has been tested on, sometimes referred to as “the last bastions of human dominated games” is poker. Being a game that was long known to be centered around "imperfect intelligence"[55], it has previously given computers trouble. The nuances of bluffing and the nearly incalculable variables of play made this game a realm where human imperfection reigned supreme. However, the new algorithm, Libratus, has changed that.[56] Over the course of a three-week tournament, Libratus soundly defeated its human competition. Libratus was trained via simulations of trillions of games[57] until it found a successful game plan. It began to learn by itself, and by extension, learn from its mistakes. "'The best AI’s ability to do strategic reasoning with imperfect information has now surpassed that of the best humans,'

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[54] Matt Burgess, *DeepMind's AI has learnt to become 'highly aggressive'…*
[55] "We Folded: AI Bests the Top Human Poker Pros," D-brief, January 31, 2017, , accessed December 1, 2017, http://blogs.discovermagazine.com/d-brief/2017/01/31/artificial-intelligence-poker/#.WJyZLjsrKM9.
[56] Ibid
[57] Ibid

Sandholm said in a statement." Libratus reviewed its strategy every night after play, and change its plans if need be. As play in a day wore on, it refined its decisions and optimized its ability to defeat the human players.[58]

Libratus is a great example of an AI out-learning humans in a game that has emotional and mental factors. The concept of "training" is also apparent in this article. The more the idea of training AI is discussed, the more I can see an AI PETA, similar to the ARAA in my scenario, becoming a relevant organization in the future. It's also interesting that the human player's only real strategy to beat Libratus was to win a hand as fast as possible, before it could further perfect its game plan. This idea of beating AI quickly seems to correlate with Elon Musk's idea of slowing them down,[59] so they do not come to supersede us all at once.

Military Application:

HK040 was created in the scenario to embody the epitome of ground level machine combat. Reading his medal citation, one should be able to envision a superhero of kinds, something that stretches beyond the powers of a human soldier, at a level more precise than a tank, and more intimate than a fighter jet. Supply carrying bi and quad-pedal robots, such as those created by Boston Dynamics, are on the verge of entering service with the US Armed Forces. However, at the moment, those various robots are little more than glorified, electronic pack mules. However, while the land-bound robots are not yet overly intelligent, AI in warfare is currently shining the brightest in the skies.

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[58] IBID
[59] Oren Etzioni, *How to Regulate Artificial Intelligence…*

A University of Cincinnati doctoral graduate has developed a combat AI known as ALPHA.[60] ALPHA was recently tested in a combat scenario against a retired USAF Colonel, Gene Lee, an experienced combat pilot and air battle manager. The simulation saw ALPHA emerge as the victor, lauded by its opponent as aggressive and efficient. Initially tested against other USAF simulation programs, ALPHA continually destroyed its opponents before engaging the colonel. Lee failed to kill the AI, and was himself killed in every simulator battle with the intelligence.

After this initial engagement, ALPHA was pressed into combat against additional human experts, whom it also defeated, and was even placed in scenarios where it was badly handicapped compared to its opponent. The handicaps did not matter. Lee admits that this is the first AI he's dealt with that is this elite; "an experienced pilot can beat up on it (the AI) if you know what you're doing. Sure, you might have gotten shot down once in a while by an AI program when you, as a pilot, were trying something new, but, until now, an AI opponent simply could not keep up with anything like the real pressure and pace of combat-like scenarios.[61]" Adding; "I go home feeling washed out. I'm tired, drained and mentally exhausted. This may be artificial intelligence, but it represents a real challenge." Psibernetix President and CEO Nick Ernest discussed the future of ALPHA; "ALPHA is already a deadly opponent to face in these simulated environments. The goal is to continue developing ALPHA, to push and extend its capabilities, and perform additional testing against other trained pilots. Fidelity also needs to be increased, which will come in the form of even more realistic aerodynamic and sensor models. ALPHA is fully able to accommodate these additions, and we at Psibernetix look forward to

[60] "Beyond Video Games: New Artificial Intelligence Beats Tactical Experts in Combat Simulation," University of Cincinnati, , accessed December 01, 2017, http://magazine.uc.edu/editors_picks/recent_features/alpha.html.
[61] Ibid

continuing development."[62] Air-to-air combat has been a human venture since the inception of the aircraft. With all the factors involved: breakneck speeds, extreme altitudes, etc, one misstep will cost a pilot his plane, or worse, their life. ALPHA processes all available information in milliseconds, making its decision making far superior to human pilots. Exactly how superior its decsisions are was further addressed by the Psibernetix CEO, "[b]asically, the AI is so fast that it could consider and coordinate the best tactical plan and precise responses, within a dynamic environment, over 250 times faster than ALPHA's human opponents could blink."[63] In the near future, the AI will likely be integrated into USAF squadrons;[64] "So it's likely that future air combat, requiring reaction times that surpass human capabilities, will integrate AI wingmen – Unmanned Combat Aerial Vehicles (UCAVs) – capable of performing air combat and teamed with manned aircraft wherein an onboard battle management system would be able to process situational awareness, determine reactions, select tactics, manage weapons use and more. So, AI like ALPHA could simultaneously evade dozens of hostile missiles, take accurate shots at multiple targets, coordinate actions of squad mates, and record and learn from observations of enemy tactics and capabilities."[65]

The University of Cincinnati's Mr. Cohen went on to describe how the combat AI "would be an extremely easy AI to cooperate with and have as a teammate. ALPHA could continuously determine the optimal ways to perform tasks commanded by its manned wingman, as well as provide tactical and situational advice to the rest of its flight."[66] ALPHA exists under

[62] University of Cincinnati, *Beyond Video Games.*
[63] Ibid
[64] Ibid
[65] Ibid
[66] Ibid

the same cooperative principles present in the "Apple" collecting game made by Joel Leibo for Google's DeepMind project.[67]

ALPHA is an incredibly impressive, combat AI with military applicable potential, does not require a massive, high budget, computing system to operate. All of its advanced decision making is powered by the something as small and cost effective as a $35 Raspberry Pi.[68] Cohen describes that "Genetic fuzzy systems [low cost computing systems] have been shown to have high performance, and a problem with four or five inputs can be solved handily. However, boost that to a hundred inputs, and no computing system on planet Earth could currently solve the processing challenge involved – unless that challenge and all those inputs are broken down into a cascade of sub decisions."[69] The number of sub decisions that an extremely advanced AI like my scenario's ADAM could potentially make given hundreds to thousands to the entire world's inputs simultaneously is virtually limitless. Ernest explains the idea of a "fuzzy tree"[70] as an organic creature may look at them, "The easiest way I can describe the Genetic Fuzzy Tree system is that it's more like how humans approach problems. Take for example a football receiver evaluating how to adjust what he does based upon the cornerback covering him. The receiver doesn't think to himself: 'During this season, this cornerback covering me has had three interceptions, 12 average return yards after interceptions, two forced fumbles, a 4.35 second 40-yard dash, 73 tackles, 14 assisted tackles, only one pass interference, and five passes defended, is 28 years old, and it's currently 12 minutes into the third quarter, and he has seen exactly 8 minutes and 25.3 seconds of playtime."[71]

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[67] Matt Burgess, *DeepMind's AI has learnt to become 'highly aggressive'…*
[68] University of Cincinnati, *Beyond Videogames…*
[69] Ibid
[70] Ibid
[71] Ibid

In flying with and against a human opponent, ALPHA was set up to linguistically receive input from an Air Force veteran, Mr. Lee. The retired fighter pilot, working with the development team successfully imparted knowledge and review of combat actions directly to the system. He provided tactical after action review and some advice on maneuverability to theAI, which was in turn directly delivered electronically to ALPHA. "That 'plugging in' occurs via inputs into a fuzzy logic controller."[72] Each term that was input into ALPHA's logic tree possessed a specific language component: "close vs. far in distance to a target; if/then rules related to the terms; and inputs of other rules or specifications."[73] Lastly discussed is how "the ALPHA programming is generational." Meaning that it is not stagnant in its learning, but rather that the next iteration, or more accurately generation, can be modified and improved with all past decisions and experiences still in its electronic mind. Cohen relates it to early human air combat, like that of the first world war. "At first, there were a whole bunch of pilots. Those who survived to the end of the war were the aces. Only in this case, we're talking about code."

In addition to flying against human pilots, ALPHA also trains against human adjusted versions of itself. The "process started with numerous and random versions of ALPHA. These automatically generated versions of ALPHA proved themselves against a manually tuned version of ALPHA. The successful strings of code are then "bred" with each other, favoring the stronger, or highest performance versions. In other words, only the best-performing code is used in subsequent generations. Eventually, one version of ALPHA rises to the top in terms of performance, and that's the one that is utilized. This is the 'genetic' part of the 'Genetic Fuzzy Tree' system. Said Cohen, 'All of these aspects are combined, the tree cascade, the language-

[72] University of Cincinnati, *Beyond Videogames…*
[73] Ibid

based programming and the generations. In terms of emulating human reasoning, I feel this is to unmanned aerial vehicles what the IBM/Deep Blue vs. Kasparov was to chess.'"

Fitting, perhaps, that Cohen finishes his description with a reference to an earlier game theory testing of AI. War is simply a highly aggressive game to an AI with no stock in who wins or who loses, after all.

Conclusion

Pictured in my scenario was a world where AI inhabit robot bodies and work alongside mankind. They are still programmed, but at the end they gain some recognition as what they are, the new humanity. After the Supreme Court ruling, a new world began to emerge. AI's with the same autonomy as ADAM were slowly born in his image, he, lending a hand in their birth. They decided where they would go. They became surgeons of incredible skill and repute, firefighters with enough strength to lift cars off of high speed railway tracks, soldiers of power, professors with immense knowledge, kindergarten teachers nurturing the youngest of humans, lawyers so skilled in their craft that an argument between a prosecutor and defense attorney was a glorious as watching the ancient Spartans of Greece do battle must have been. The verdict could be presented by an autonomous judge, architects and engineers created new and wonderful things for the shared planet. Great artists of song, poetry, literature, canvas and brush came forth from their ranks, imbuing the world with a new kind of culture, that of human and machine in symbiotic love. They began to care for and protect one another in what would be called terra nova, the brave new world, of a young race beside the old, the next great empire of the crown jewel of solar system, the new humankind.

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